Al Cont'

32. Function carrier in accordance with claim 1,

characterised in that

the ring-like region of the rivet sleeve has noses and/or recesses at a side confronting the component to provide a security against rotation.

REMARKS

The claims in the PCT Application are amended primarily to eliminate multiple dependencies between the claims.

Respectfully submitted

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Date

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VERSION WITH MARKS TO SHOW CHANGES MADE

In the Claims

Please amend the claims as follows:

1. (Amended). A function carrier [(11)] insertable from one side into a component, for example into a sheet metal part or into a plastic part, comprising a functional element [(12)] having shaft and head parts [(18, 20)] and a rivet sleeve [(14)],

characterised in that

the rivet sleeve [(14)] is movable in the axial direction of the shaft part [(18)] along the shaft part and in that the functional element has a concave fillet in the transition region between the shaft part [(18)] and the head part [(20)] forming a sliding surface for the deformation of the rivet sleeve [(14)].

2. (Amended). Function carrier in accordance with claim 1,

characterised in that

the rivet sleeve [(14)] has a tubular deformable region [(42)] adjacent the head part [(20)] and a ring-like, at least substantially non-deformable region [(46)] remote from the head part [(22)].

3. (Amended). Function carrier in accordance with claim 1,

characterised in that

the rivet sleeve [(14)] has a tubular deformable region [(42)] adjacent the head part [(20)] and a ring-like deformable region [(46)] remote from the head part [(20)].

4. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the end face [(44)] of the rivet sleeve [(14)] remote from the head part [(20)] is arranged perpendicular to the longitudinal axis [(56)] of the shaft part [(18)].

5. (Amended). Function carrier in accordance with claim 4,

characterised in that

the said end face [(44)] of the rivet sleeve [(14)] is formed as a sliding surface.

6. (Amended). Function carrier in accordance with claim 4,

characterised in that

the said end face [(44)] of the rivet sleeve [(14)] is formed for the transmission of rivet forces acting in the axial direction, but is not itself deformable or is at least substantially not deformable under the riveting forces.

7. (Amended). Function carrier in accordance with claim 4,

characterised in that

the said end face [(44)] is designed to take up torques which turn the rivet sleeve [(14)] and bring about the deformation of the rivet sleeve [(14)].

8. (Amended). Function carrier in accordance with claim 7,

characterised in that

the shaft part [(18)] of the functional element [(12)] has an outer thread [(16)], at least in the region adjacent to the concave fillet [(22)] and in that the rivet sleeve [(14)] has an internal thread [(82)] corresponding thereto.

9. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the shaft part [(18)] of the functional element [(12)] has a means [(30)] for the transmission of torques at the end remote from the head part [(20)].

10. (Amended). Function carrier in accordance with claim 9,

characterised in that

the means is a spigot [(30)] having one or more side faces or longitudinal grooves.

11. (Amended). Function carrier in accordance with claim 9,

characterised in that

the means has the form of a tool or wrench-receiving recess [(34)] formed in the free end of the shaft part [(18)], for example in the form of an internal hexagon.

12. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the shaft part [(18)] of the functional element [(12)] has a ring groove [(96)] in the region directly ahead of the concave fillet [(22)], and in that the ring-like region [(46)] of the rivet sleeve can be deformed into this ring groove [(96)].

13. (Amended). Function carrier in accordance with claim [one of the preceding claims] 1 [to 6 or 9 to 12],

characterised in that

the concave fillet is provided with features (24:100) providing security against rotation, for example with a plurality of recesses and/or noses distributed in the peripheral direction, and in that the rivet sleeve [(14)] can be brought by the deformation into a form-fitted connection with these features (24; 100) providing security against rotation.

14. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the end face [(44)] of the head part [(20)] remote from the shaft part [(18)] is equipped with features providing security against rotation, for example noses providing security against rotation and/or recesses.

15. (Amended). Function carrier in accordance with claim 3 [one of the preceding claims 3 to 16 or 9 to 14],

characterised in that

the ring-like region [(46)] of the rivet sleeve [(14)] has, when considered in a radial section, at least substantially the shape of a right-angled triangle, the outer side [(92)] of which is arranged obliquely to the end face of the rivet sleeve [(14)] remote from the head part [(20)] and to the inner face of the rivet sleeve [(14)] adjacent the shaft part [(18)].

16. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the tubular region [(42)] of the rivet sleeve [(14)] has an inner wall [(94)] which represents an axial continuation of the inner surface of the ring-like region [(46)] of the rivet sleeve [(14)].

17. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims 1 to 14],

characterised in that

the tubular region [(42)] of the rivet sleeve [(14)] is at least substantially rectangular when considered in radial section, with the tubular region [(46)] having an inner wall, which represents an axial continuation of the inner surface of the ring-like region (46) of the rivet sleeve and in that the ring-like region (46) of the rivet sleeve (14) forms a ring shoulder at its outer side with the adjacent side of the ring-like region [(42)].

18. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims],

characterised in that

the functional element [(12)] is formed as a bolt element.

19. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims 1 to 17],

characterised in that

the functional element [(12)] is formed as a nut element, i.e. at least the shaft part [(18)] is made hollow and this and/or the head part is formed with an internal thread or can be provided with an internal thread.

20. (Amended). Component assembly in accordance with claim 1, [comprising a component [(10)], for example a sheet metal part or a plastic part and a function carrier [(11)] in accordance with one or more of the preceding claims],

characterised in that

the plate-like component [(10)] has a hole [(102)], the diameter of which corresponds at least substantially to that of the head part [(20)] and in that the deformed, tubular region [(42)] of the rivet sleeve [(14)], at the inner side, contacts the concave fillet [(22)] in at least substantially flush manner, projects radially outwardly beyond the edge of the head part [(20)] of the functional element and forms a ring groove with the ring-like region [(46)] which accommodates the marginal region of the hole of the component.

21. (Amended). Component assembly comprising a component [(10)], for example a sheet metal part or a plastic part and a function carrier in accordance with one or more of the preceding claims,

characterised in that

the component has a pot-like recess [(38)], the diameter of which corresponds at least substantially to that of the head part [(20)] and the base [(58)] of which is contacted by the end face [(44)] of the head part [(20)] remote from the shaft part [(18)] in a manner secured against rotation (36) and in that the deformed tubular region (42) of the rivet sleeve [(14)] at least substantially flushly contacts the concave fillet [(22)] at the inner side, projects radially outwardly

over the edge of the head part of the functional element [(12)] and projects into the side wall of the pot-like recess [(38)] of the component [(10)] and is received there in a form-fitted manner.

22. (Amended). Component assembly in accordance with claim [20 or] 21,

characterised in that

the end face of the rivet sleeve [(14)] remote from the head part [(20)] is either arranged flush with the surface of the component [(10)] remote from the head part [(20)] or sunk into this surface, with the ring-like region [(46)] of the rivet sleeve optionally projecting into a possibly present groove of the shaft part [(18)] and optionally having, in the region of this groove [(96)], a conical alignment aid [(106)] arranged concentric to the shaft part [(18)] for a component to be mounted.

23. (Amended). Method of inserting a function carrier [in accordance with one of the preceding claims 1 to 19] into a plate-like component [(10), for example in order] to form a component assembly [in accordance with the claims 20 or 22], wherein the functional element includes a shaft, head parts and a rivet sleeve and wherein the rivet sleeve is movable in the axial direction of the shaft part along the shaft and wherein the functional element has a concave fillet.

characterised in that

the head part [(20)] of the functional element [(12)] is passed through a hole [(102)] formed in the plate-like component [(10)] or is pressed into a recess [(38)] formed in the component and the rivet sleeve [(14)] is subsequently moved in the axial direction of the functional element [(12)] onto the concave fillet [(22)] and onto the head part [(20)] of the functional element [(12)], whereby the tubular region [(42)] of the rivet sleeve [(14)] is deflected radially outwardly by the concave fillet [(22)] into an anchoring position in which the free end [(40)] of the tubular region [(42)] projects radially beyond the head part [(20)] of the functional element.

24. (Amended). Method in accordance with claim 23,

characterised in that

the free end [(40)] of the tubular region is pressed into the hole wall of the component [(10)] by the deformation of the tubular region [(42)] of the rivet sleeve [(14)] and thus prevents the extraction of the function carrier out of the recess [(38)] of the component receiving the head part [(20)] of the functional element [(12)].

25. (Amended). Method in accordance with claim 23,

characterised in that

through the deformation of the tubular region [(42)] of the rivet sleeve [(14)], a groove [(110)] is formed between the deformed tubular region [(42)] and the ring-like region [(46)] which receives the material of the marginal edge of the hole of the component.

26. (Amended). Method in accordance with claim 25,

characterised in that

the ring-like region [(46)] of the rivet sleeve [(14)] is deformed into a ring groove [(96)] formed in the shaft part [(18)] directly ahead of the concave fillet [(22)].

27. (Amended). Method in accordance with claim 23 [one of the preceding claims 23 to 26],

characterised in that

the rivet sleeve [(14)] is moved in the axial direction towards the concave fillet [(22)] while an axial force in the opposite direction is produced on the shaft part [(18)] of the functional element [(12)].

28. (Amended). Method in accordance with claim 23 [one of the claims 23 to 26], characterised in that

the ring-like region [(46)] of the rivet sleeve [(14)] has an internal thread [(82)] which is screwed onto an external thread provided on the shaft part [(18)] of the functional element [(12)] and the radial deformation of the tubular region of the rivet sleeve is produced by a relative rotation between the rivet sleeve [(14)] and the functional element [(12)].

29. (Amended). Method in accordance with claim 23 [one of the preceding claims 23 to 27], characterised in that

an auxiliary tool [(60)] provided with a thrust bearing [(68)] is used for the deformation of the rivet sleeve [(14)], with the thrust bearing [(68)] having a lower ring [(70)], the end face of which remote from the rolling elements presses against the end face [(44)] of the ring-like region [(46)] of the rivet sleeve [(14)] and the other ring [(72)] of which is provided on a rotatable sleeve [(64)] which has an internal thread [(78)] which cooperates with an external thread [(16)] provided on the shaft part [(18)] of the functional element [(12)], with a relative rotation of the sleeve [(64)] which cooperates with the outer thread of the shaft part of the functional element [(12)] leading to an axial movement of the thrust bearing [(70)] and of the rivet sleeve [(14)] and through this to a deformation of the rivet sleeve [(14)] at the concave fillet [(22)] of the functional element [(12)].

30. (Amended). Tool for the insertion of a function carrier [in accordance with one of the preceding claims 1 to 19] into a plate-like component, wherein the functional element includes shaft and head parts and a rivet sleeve and wherein the rivet sleeve is movable in the axial direction of the shaft part along the shaft part, characterised in that

the tool has two coaxial devices rotatable relative to one another, with the inner device [(62)] being capable of being brought into a rotationally fixed connection with the shaft part [(18)] of the functional element [(12)] and the outer device [(64)] being capable of being brought into rotationally fixed connection with the rivet sleeve or with an auxiliary tool [(70)] which presses onto the rivet sleeve [(14)], with either the ring-like region [(46)] of the rivet

sleeve [(14)] or the outer device having an inner thread [(78)] which cooperates with an outer thread [(16)] provided on the shaft part [(18)] of the functional element.

31. (Amended). Tool in accordance with claim 30,

characterised in that

the auxiliary tool is formed as a thrust bearing, with the thrust bearing [(68)] having a lower ring [(70)], the end face of which remote from the rolling elements presses against the end face [(44)] of the ring-like region [(46)] of the rivet sleeve [(14)] and the other ring [(72)] of which is provided on a rotatable sleeve [(64)] which has an internal thread [(78)] which cooperates with an external thread [(16)] provided on the shaft part [(18)] of the functional element [(12)], with a relative rotation of the sleeve [(64)] which cooperates with the outer thread of the shaft part of the functional element [(12)] leading to an axial movement of the thrust bearing [(70)] and of the rivet sleeve [(14)] and through this to a deformation of the rivet sleeve [(14)] at the concave fillet [(22)] of the functional element [(12)].

32. (Amended). Function carrier in accordance with claim 1 [one of the preceding claims 1 to 19],

characterised in that

the ring-like region [(46)] of the rivet sleeve has noses [(90)] and/or recesses at a side confronting the component [(10)] to provide a security against rotation.